Joint ECOP-SPC and ESCOP-PC Joint Planning Committee
Mystic Hilton Hotel
Mystic, CT
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Summary Notes of Presentations and Discussions on Biotechnology

Participants: Eric Young, Jon Ort, George Cooper, Al Parks, Gary Anderson, Mike Chippendale, Nancy Bull, Dan Kugler, Terry Meisenbach, Patricia Sobrero, Bill Trumble, Sam Donald, Myron Johnsrud, Al Dedrick, B.S. Benepal, Colien Hefferan, Richard Frahm, Virginia Clark, Ted Alter, and Suman Singha.

Invited speakers:
Tom Hoban, Professor, Dept. of Sociology and Anthropology, North Carolina State University.
Gill Meyer, Director Biotechnology Issues and Programs, Dupont, Wilmington, Delaware.

Gill Meyer made a presentation on "Biotechnology Implications for Strategic Planning." The topic is important as the public and private sectors help the public go through a transition period related to biotechnology.

Biotechnology as defined by Dupont encompasses a broad set of scientific processes that can bring significant benefit to people around the world hen used safely. Biotechnology has a number of applications: **medical** – prevent and cure serious diseases; **food and feed** – reduce the environmental impact of farming, while increasing productivity, health and nutrition; **materials** – utilizes renewable resources to replace reliance on petro-chemicals; and **sensors** – technologies that create miniature, more sophisticated electronic and diagnostic tools.

Dupont is utilizing biotechnology to: improve food quality, safety and nutrition. In this regard one of its efforts is evaluation of the potential of soy; improve the productivity and environmental safety of agriculture; and developing processes to make materials such as polyester from crops (corn). These commitments to biotechnology originate from a commitment to engage and listen to all interested parties, to advocate for informed consumers, a desire to practice biotechnology with the same safety standards that have marked nearly 200 years of industrial safety and a desire to derive 25% of it's revenues in 2010 from non-depletable raw materials. Dupont's program objective recognizes that winning consumer acceptance takes time, therefore, it views the commitment to biotechnology as a long-term, extended consumer information program.

In the pursuit of change in biotechnology, those involved must recognize that support for biotechnology is highest among those who have heard about it.

Biotechnology security is of major concern. Protest activity is occurring with increasing frequency, intensity and with great sophistication. It is important that those involved in biotechnology research be aware of these concerns and use appropriate security networks for facilities and staff.

Tom Hoban used the topic "Challenges of Introducing Biotechnology into Society." Society has differing understanding of biotechnology. From a social science perspective, there are several challenges.

- Most people have limited knowledge of biotechnology.
- Sensationalized media coverage.
- Concerns about environmental and health risks.
- Ethical and social issues need attention.
- Food is an emotional and personal area.

Confidence and trust are key to the population accepting new technology. Based on surveys the U.S. population rank the following in rank of trust (highest to lowest).

- American Medical Association
- Food and Drug Administration
- University scientists
- Dietitians
- Farmers
- News reporters
- Biotechnology companies
- Food manufacturers
- Chefs
- Activists

Ranking by Industry leaders of the value (applications) of biotechnology (highest to lowest) – Results of a telephone interview and mail survey of industry leaders

- Enhanced nutrition
- Decreased pesticide use
- Increased food safety
- Environmental sustainability
- Increased quality ingredients
- Decreased food prices
- Better animal feeds
- Improved farming

In the survey, seventy-five percent of the industry leaders believed that using labels to reflect biotechnology applications would be perceived by customers as a negative warning; sixty-eight percent strongly support biotechnology; thirty percent of industry leaders support biotechnology; and two percent oppose biotechnology.

Major influences of biotechnology

1. Awareness and understanding
2. Recognition of benefits
3. Ethnically acceptable
4. Confidence in government
5. Trust in information

Based on European survey results the social and cultural reasons to resist biotechnology include: sensational media coverage; concerns over environmental and health risks; culture does not support innovations and penalizes failure; lack of perceived benefits; support for small farms for food security; value placed on open space and culture; and opposition to processed or foreign foods.

In valuing biotechnology there is an educational need for demonstrating the benefits of biotechnology. Some include the fact that it promotes environmentally-friendly farming, decrease world food hunger and increase benefits to nutrition and food safety.

Role of land-grant universities (research and extension)

- Need to support science and agriculture
- Trusted by consumers and leaders
- Provide interdisciplinary and interorganizational networks
- Brokers in eliminating the growing controversy concerning the future and risk

Discussions related to the Joint ECOP/ESCOP Agricultural Biotechnology Task Force Report

General discussion focused first on the development of future human capital in biotechnology. A number of points were made relative to addressing LGU student needs in biotechnology education.

- Based on current job announcements, expectations of industry is for a large array of skills
- Students need more non-traditional knowledge and awareness, ie. Sociology, psychology, public relations, etc.
- Most important for current graduates is the ability to continue to learn rapidly due to rapidly changing technology and knowledge in this area
- There is a greater need for issues and crisis management skills
- All students in agricultural colleges need to be educated in general biotech issues, concerns and potentials
- ACOP should be invited to join the joint planning and implementation efforts in this area.

LGU's need to pay more attention to the middle of the food value chain, ie. Food industry components, and they should establish public relations positions/programs in biotech. Scientists must be open, honest and objective in communicating about biotech. A careful balance must be maintained between being pro-ag and an advocate for the consuming public. LGU's should work to create a consumer-driven agriculture mentality and culture on their campuses. Consumer opinions on production agriculture and biotech range across the entire spectrum and each segment must be addressed differently. We also must be prepared to deal with the implications of biotech on the structure of the agriculture, food and fiber system and on agriculture and environmental policy.

What are the implications of the biotechnology revolution related to agriculture and the agriculture and food system? How should we produce, what should be the scale of production and who will control the supply chains?

The system should be concerned that it is working in the current time frame and need to provide challenges to get out into a visioning mode. There should be back casting on programs, structure and function of the system.

Tom Hoban, who has been appointed by ECOP and ESCOP as Chair of the Agricultural Biotechnology Implementation Task Force, asked the Joint Planning Committee to consider the following questions.

What do you see as our Task Force's mission, objectives and deliverables?
What are the LGU system's strengths and weaknesses in this area?
What are the opportunities and threats the LGU system faces in this area?

The discussion yielded the following points for the Implementation Task Force to consider.

Potential mission, objectives and deliverables:

- Push the edge of science
- Develop an informed public (non-judgmental)
- Engage and listen to all audiences
- Inform interested public about modern agriculture
- Report to internal and external audiences
- Develop appropriate strategies for the land-grant system to respond over the short- and long-term
- Identify partners
- Create educational resources
- Develop an assessment of the current status of the land-grant system related to biotechnology
- Create a strategic direction plan for research and extension with appropriate partners. Focus on outcomes, not on methods. This should lead to a vision for the system.
- Establish a code of ethics for biotechnology
- Prepare for radical opposition
- Develop solid extension education programs

- Collect currently available information resources on the subject. This should be condensed, timely and accessible information that is from reliable sources.
- Develop rapid response capabilities
- Strategies for youth education
- Address biotechnology in the broad sense, not just relative to food
- Put issue in context and perspective by asking the right questions
- Identify the role of public institutions in dealing with transforming technologies
- Engage the public in conversation about how biotechnologies should be used
- Assist in the development of guidelines for security
- Identify key areas where information is needed and how to deliver it
- Determine how to maintain trust and credibility with varied funding sources for biotechnology issues
- Develop information for growers and producers
- Work with the media

Strengths, Weaknesses, Opportunities and Thrusts

Strengths
- Infrastructure
- Credibility
- Experiences with other issues
- Commitment
- Science and knowledge base
- Multiple existing partnerships (multidisciplinary and interdisciplinary)
- Multiple funding sources
- Visibility
- Good and dedicated people used to working with people
- Good communications networks
- Local to global networks

Weaknesses
- Steeped in tradition and slow to implement change
- Credibility is currently being questioned
- Slow to deliver
- Not market driven
- Good communication skills but cannot talk so that people can understand
- Entrepreneurial spirit among the faculty
- Lack of flexibility to address issues and needs
- Lack of technical skills on the front line
- Failure to communicate what we do and the benefits
- Present ourselves as “the” expert and limit conversation
- Lack of biotechnology education capacity in extension
- Do not speak with one voice
- Often are not clear about what we don’t know
- Do not have critical thinking skills
- Many graduates of land-grant universities do not understand biotechnology or the research and extension system
- Not good at acknowledging other ways of knowing

Threats
- Terrorist
- Perception of public doe to a lack of action
- Lack of public awareness of system contributions
- Competition from other entities to do what we should do

- Perception of pro-biotech bias
- Next biotechnology related crisis
- Declining traditional funding sources
- Misinformation in public media
- Media is shaping public opinion
- Selective media coverage
- Potential reaction of traditional clientele

Opportunities

- Creation of new audiences
- Do something creative in response to biotechnology (e.g. virtual centers)
- CBI call for proposals to setup Internet site
- New diverse funding sources
- Communication and relationship building with the public
- Need a "hot topic" for attracting resources and maintaining a neutral posture (with controversial funds)
- Involve a wider, more diverse set of disciplines in the design of how issues should be addressed
- Increase access of public to biotech information (e.g. plants, crops, etc.)
- Opportunities to develop a healthier, more productive agriculture that is more environmentally friendly
- Increase opportunities for international involvement
- Increase capacity to deal with other complex and controversial issues
- Opportunity to remain relevant
- Demonstrate a willingness to be pro-Ag
- Improve agriculture by making it more responsive to consumers (e.g. rational, useful procedures, good choices for where technology will take us, and model how we thing about public investments for research and education

NEXT MEETING

The committee decided that our next Joint Planning Committee meeting would concentrate on futuring 20 to 50 years into the future with a focus on biotechnology (broadly defined). We will use a process described by Gil Meyer and outlined in the book entitled "Art of the Long View". Our futuring will include potential ethical, social, scientific, economic, political and environmental issues and impacts of biotechnology advancements.

This meeting will be held in conjunction with the Partnership Workshop in February. The Joint Committee will meet on Monday, Feb. 12, from 8 a.m. to 5 p.m. at the InterHarbor Marriott in Baltimore, MD. The ECOP-SPC and ESCOP-PC committees will meet separately on Sunday, Feb. 11 from 6 to 9 p.m. Myron Johnsrud, who is helping with arrangements for the Partnership Workshop, will make arrangements with the hotel for our meetings. Details will be sent when they're available.

Please mark your calendars for Feb. 11 and 12.